Contents of volume 7

No. 1 pp 1– 66 issued in November 1992
No. 2 pp 67–130 issued in January 1993
No. 3 pp 131–194 issued in April 1993
No. 4 pp 195–258 issued in May 1993

Aber JD → Downs MR
Alexander JD → Tyree MT
Aloni R → Lev-Yadun S
Amiet R → Egli S
Antonova GF, Stasova VV: Effects of environmental factors on wood formation in Scots pine stems 214

Becker EJP → Downes GM
Beyschlag W → Pfanz H

Caron GE, Powell GR: Patterns of on-shoot positioning of seed cones in relation to shoot length and position in the crowns of young *Picea mariana* *182*
Clark JR → Kjelgren RK
Claudot AC, Jay-Allemand C, Magel EA, Drouet A: Phenylalanine ammonia-lyase, chalcone synthase and polyphenolic compounds in adult and rejuvenated hybrid walnut tree 92
Cleve B van → Sauter JJ
Cregg BM, Teskey RO, Dougherty PM: Effect of shade stress on growth, morphology, and carbon dynamics of loblolly pine branches 208
Cunningham M → Luxmoore RJ

Dormling I → Lascoux DM
Dougherty PM → Cregg BM
Downes GM, Becker EJP, Turvey ND, Porada H: Strength and structure of stems from fast grown *Pinus radiata* *131*
Downes GM, Turvey ND: Relationships between stem structure and bending strength in *Pinus radiata seedlings* *86*
Downs MR, Nadelhoffer KJ, Melillo JM, Aber JD: Foliar and fine root nitrate reductase activity in seedlings of four forest tree species in relation to nitrogen availability 233
Drouet A → Claudot AC

Egger B, Hampp R: Invertase, sucrose synthase and sucrose phosphate synthase in lyophilized spruce needles; microplate reader assays 98
Egli S, Amiet R, Zollinger M, Schneider B: Characterization of *Picea abies* (L.) Karst. ectomycorrhizas: discrepancy between classification according to macroscopic versus microscopic features 123
Ericsson T, Kähr M: Growth and nutrition of birch seedlings in relation to potassium supply rate 78

Glavac V, Jochheim H: A contribution to understanding the internal nitrogen budget of beech (*Fagus sylvatica* L.) 237
Grossnickle SC: Shoot water relations and gas exchange of western hemlock and western red cedar seedlings during establishment on a reforestation site 148
Günthardt-Goerg MS, Matyssek R, Scheidegger C, Keller T: Differentiation and structural decline in the leaves and bark of birch (*Betula pendula*) under low ozone concentrations 104

Hampp R → Egger B
Havranek WM → Wieser G
Huang H, Villanueva R: Amino acids, polyamines and proteins during seed germination of two species of *Dipterocarpaceae* *189*
Huante P → Rincón E

Jay-Allemand C → Claudot AC
Jochheim H → Glavac V

Kähr M → Ericsson T
Karczewski J → Włoch W
Keller T → Günthardt-Goerg MS
Kjelgren RK, Clark JR: Growth and water relations of *Liquidambar styraciflua* L. in an urban park and plaza 195
Koch W → Maier-Maercker U
Kottke I → Münzenberger B
Kraus M, Ziegler H: Quantitative analysis of abscisic acid in needles of *Abies alba* Mill. by electron capture gas chromatography 175
Krause SC → Reich PB
Kremer A → Lascoux DM
Küppers BIL → Küppers M
Küppers M, Küppers BIL, Neales TF, Swan G: Leaf gas exchange characteristics, daily carbon and water balances of the host/mistletoe pair *Eucalyptus behriana* F. Muell, and *Amyema miquelii* (Lehm ex Miq.) Tiegh, at permanently low plant water status in the field 1
Küppers M, Schneider H: Leaf gas exchange of beech (*Fagus sylvatica* L.) seedlings in lightflecks: effects of fleck length and leaf temperature in leaves grown in deep and partial shade 160
Küppers M: Carbon discrimination, water-use efficiency, nitrogen and phosphorus nutrition of the host/mistletoe pair *Eucalyptus behriana* F. Muell and *Amyema miquelii* (Lehm ex Miq.) Tiegh. at permanently low plant water status in the field 8

Langheinrich U: Clonal variation in apical growth and content in vegetative storage proteins in *Populus* 242
Lascoux DM, Dormling I, Kremer A: Germination and phenology of 1-year-old maritime pine (*Pinus pinaster* Ait.) seedings under continuous light 48
Lev-Yadun S, Aloni R: Bark structure and mode of canopy regeneration in trees of *Melia azedarach* L. 144
Lukaszewski Z, Siwecki R, Opydo J, Zembrzuski W: The effect of industrial pollution on copper, lead, zinc and cadmium concentration in xylem rings of resistant (*Populus marilandica*) and sensitive (*P. balsamifera*) species of poplar 169
Luxmoore RJ, Cunningham M, Mann LK, Tjoelker MG: Urea fertilization effects on nutrient uptake and growth of *Platanus occidentalis* during plantation establishment 250

Magel EA → Claudot AC
Maier-Maercker U, Koch W: The effect of air pollution on the mechanism of stomatal control 12
Mann LK → Luxmoore RJ
Matyssek R → Günthardt-Goerg MS
Melillo JM → Downs MR
Münzenberger B, Kottke I, Oberwinkler F: Ultrastructural investigations of *Arbutus unedo-Laccaria amethystea* mycorrhiza synthesized in vitro 40

Nadelhoffer KJ → Downs MR
Neales TF → Küppers M
Nyman BF: Fractionated extraction and speciation of macronutrients from Scots pine and Norway spruce needles of different ages 33

Oberwinkler F → Münzenberger B
Ogrodnik B → Włoch W
Opydo J → Lukaszewski Z

Pfanz H, Beyschlag W: Photosynthetic performance and nutrient status of Norway spruce [*Picea abies* (L.) Karst.] at forest sites in the Ore Mountains (Erzgebirge) 115
Porada H → Downes GM
Powell GR → Caron GE
Powell GR: Patterns of leaf size and morphology in relation to shoot length in *Tsuga canadensis* *59*

Raffa KF → Reich PB
Reich PB, Walters MB, Krause SC, Vanderklein DW, Raffa KF, Tabone T: Growth, nutrition and gas exchange of *Pinus resinosa* following artificial defoliation 67
Rincón E, Huante P: Growth responses of tropical deciduous tree seedlings to contrasting light conditions 202

Sauter JJ, van Cleve B: Seasonal variation of amino acids in the xylem sap of "Populus x canadensis" and its relation to protein body mobilization 26
Scheidegger C → Günthardt-Goerg MS
Schneider B → Egli S
Schneider H → Küppers M
Sellin A: Resistance to water flow in xylem of *Picea abies* (L.) Karst. trees grown under contrasting light conditions 220
Siwecki R → Lukaszewski Z
Stasova VV → Antonova GF
Swan G → Küppers M

Tabone T → Reich PB
Teskey RO → Cregg BM
Tjoelker MG → Luxmoore RJ
Turvey ND → Downes GM
Tyree MT, Alexander JD: Hydraulic conductivity of branch junctions in three temperate tree species 156

Vanderklein DW → Reich PB
Villanueva R → Huang H

Walters MB → Reich PB
Wieser G, Havranek WM: Ozone uptake in the sun and shade crown of spruce: quantifying the physiological effects of ozone exposure 227
Włoch W, Karczewski J, Ogrodnik B: Relationship between the grain pattern in the wood, domain pattern and pattern of growth activity in the storeyed cambium of trees 137

Zembrzuski W → Lukaszewski Z
Ziegler H → Kraus M
Zollinger M → Egli S

Indexed in *Current Contents*

Key word index

Abies alba 175
Abscisic acid 175
Acer saccharum 156
Air pollution 12, 115
Allocation 67, 202
American sycamore 250
Amino acids 26, 189
Amyema miquelii 1, 8
Arbutus unedo 40

Bark structure 144
Betula pendula 78, 104
Budset 48

Carbohydrate 67
Carbon allocation 208
Carbon discrimination 8
Chalcone synthase 92
Classification 123
Clonal variance 242
Copper 169
Cork formation 144

Daily carbon balance 1
Daily water balance 1
Damage 175
Defoliation 67
Dipterocarpaceae 189
Dipterocarpus alatus 189
Drought stress 12
Dry matter distribution 78

Early selection 48
Eastern hemlock 59
Ectomycorrhizal types 123
Elasticity 86, 131
Establishment process 148
Eucalyptus behriana 1, 8

Fagus sylvatica 237
Forest decline 12, 115
Forests 233

Gas chromatography 175
Gas exchange measurements 12
Gas exchange 148
Germination 48
Grain pattern in wood 137
Growth analysis 202

Herbivory 67
Heterotrophy 1
Hopea odorata 189
Hydraulic conductivity 156

Invertase 98

Juglans sp. 92

Laccaria amethystea 40
Lead 169
Leaf and bark decline 104
Leaf area ratio 78
Leaf differentiation 104
Leaf temperature 160
Leaf weight ratio 78
Light dependency 202
Lightflecks 160
Lignin 131

Macronutrients 33
Manganese-nutrient uptake 250
Melia azedarach 144
Microfibril angle 131
Microplate reader assay 98
Model of cambial domains 137
Morphogenesis 59
Morphological development 148
Morphology 123
Mycorrhiza 40

Needles 33, 175
Neoformed (late) leaves 59
Net assimilation rate 78
Net photosynthesis 208
Nitrate reductase 233
Nitrate 233, 237
Nitrogen deposition 233
Nitrogen nutrition 8
Nitrogen 86
Norway spruce 33
Nutrient deficiency 195
Nutrition 67

Ozone 104
Ozone uptake 227

Pattern along shoots 59
Periderm differentiation 144
Phenylalanine ammonia lyase 92
Phosphorus nutrition 8
Photoperiod 242
Photosynthesis 1, 115, 160
Photosynthetic induction 160
Picea abies 115, 123, 220
Pinus pinaster 48
Pinus radiata 86, 131
Pinus sylvestris 214
Pinus taeda 208
Platanus occidentalis 250
Pollution 169
Polyamines 189
Polyphenolic compounds 92
Populus 26, 169, 242
Position along shoot length 182
Position around shoot circumference 182
Precipitation 214
Preformed (early) leaves 59
Protein 33
Protein bodies 26

Quercus velutina 156

Rejuvenation 92
Relative hydraulic conductivity 220
Resistance to water flow 220
Root growth-urea 250

Scots pine 33
Seasonal variation 237
Seed cone bearing shoots 182
Seed cone distribution 182
Seedlings 233
Senescence 104
Shoot development 144
Shoot vigour 182
Shoot water relations 148
Spruce 98, 227
Stem deformation 86
Stem form 86
Stem insertions 156
Stem strength 131
Stomatal conductance 195, 227
Stomatal control 12
Sucrose phosphate synthase 98
Sucrose synthase 98
Sulfur dioxide 115
Sun and shade leaves 160
Synthesis 40

Temperature 214
Total nitrogen content 237
Tracheid radius 220
Tree-seedlings 202
Tropical deciduous forest 202
Trunk height gradient 237
Tsuga canadensis 156

Ultrastructure 40
Urban 195

Vegetative storage proteins 242
Vessels 26

Water potential 195
Water-use efficiency 1, 8
Wood formation (cambium, radial cell expansion, secondary wall thickening) 214

Xylem 220
Xylem pressure 1
Xylem sap 237
Xylem transport 26

Zinc 169